

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Response Efforts Undertaken During 2017)	PS Docket No. 17-344
Hurricane Season)	

COMMENTS OF VIYA

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I. INTRODUCTION AND SUMMARY

Virgin Islands Telephone Corp., d/b/a Viya, and its affiliated companies operating in the United States Virgin Islands (“USVI” or “Territory”) (collectively, “Viya”)¹ submit these comments to the Federal Communications Commission (“Commission”) in response to the Public Notice in the above-referenced proceeding.² As further discussed herein, the USVI is a difficult market in which to provide communications services under normal circumstances. It became exponentially more challenging as a result of the effects of Hurricanes Irma and Maria. Following these historic storms, Viya as rapidly as possible began communications recovery efforts to assist USVI residents and businesses, first responders, and the USVI government. In

¹ Viya (formerly known as Innovative) is a group of affiliated companies that provide wireline voice and broadband telecommunications, mobile and fixed wireless service, and cable television service to residents and businesses in the USVI. Viya is an operating subsidiary of ATN International, Inc. (“ATNI”), which acquired Viya in July 2016. *See Applications of National Rural Utilities Cooperative Finance Corporation and Atlantic Tele-Network, Inc. For Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, 31 FCC Rcd 6913 (2016). ATNI is a publicly traded Delaware corporation that provides, through its subsidiaries, international and domestic wireless and wireline voice and data services to retail residential and enterprise customers, including mobile wireless solutions, local exchange services, and broadband Internet access services, as well as wholesale connectivity and related services to carrier customers. ATNI also is the indirect owner and operator of terrestrial and submarine fiber optic transport systems domestically and internationally.

² *Public Safety and Homeland Security Bureau Seeks Comment on Response Efforts Undertaken During 2017 Hurricane Season*, Public Notice, 33 FCC Rcd 10245 (PSHSB 2017) (“Public Notice”).

large part due to the Commission’s timely, flexible, and constructive approach to post-hurricane regulatory oversight and assistance, Viya has been able to make substantial progress. But much more still needs to be done.

In these comments, Viya recounts its experience recovering from Hurricanes Irma and Maria and, based on that experience, sets forth certain recommendations relating to disaster recovery, in particular in connection with smaller island markets.³ Specifically, Viya requests the Commission to consider providing additional funding to smaller island markets for the hardening of network infrastructure against future storms and to consider the unique operational challenges of serving smaller island markets in its policymaking generally. In addition, Viya encourages the Commission to maintain a flexible approach to the implementation of the Disaster Information Reporting System (“DIRS”). Further, Viya believes that communications restoration should be provided a higher priority when allotting governmental disaster recovery resources. Finally, Viya encourages the Commission to continue to play a leading role in coordinating the interactions between and among carriers and federal and Territorial governmental agencies regarding communications issues arising during disaster recovery efforts.

II. HURRICANES IRMA AND MARIA MADE THE ALREADY CHALLENGING OPERATIONAL CONDITIONS IN THE USVI UNTENABLE FOR TELECOMMUNICATIONS PROVIDERS

Prior to the devastation wrought by Hurricanes Irma and Maria, the USVI market was exceedingly challenging for telecommunications providers. The combination of these two Category 5 storms, which struck the USVI within two weeks of each other in September 2017,

³ Because Viya remains thoroughly immersed in its USVI network restoration efforts, Viya’s on-island staff have had only a limited opportunity to date to participate in an extensive internal assessments and discussions of findings related to the aftermath of the storms. As its restoration efforts advance and the urgency of those efforts subsides, Viya expects to be a more active participant in this Commission proceeding.

made it all but impossible to maintain operations in the Territory without U.S. government assistance. As further set forth herein, Viya is grateful for, and believes it is important to acknowledge, the Commission's exhaustive efforts to assist Viya and other telecommunications providers in the USVI (as well as in Puerto Rico, Houston, and Florida) with the restoration of basic wireless connectivity and then of communications networks following the hurricanes. With a population of only approximately 107,000 residents,⁴ the USVI often is forgotten or overlooked—but not by the Commission.

A. The Geography and Economic Situation in the USVI Present Challenges to USVI Telecommunications Providers Even Under Normal Circumstances.

The geography, topography, and weather in the USVI make the deployment of telecommunications facilities substantially more costly and difficult than in the contiguous United States. Indeed, the USVI is located far from the U.S. mainland—1,100 miles southeast of Florida.⁵ In addition, of the three main islands that comprise the USVI, St. Thomas (“STT”) and St. John (“STJ”) are only 6.5 miles apart, while St. Croix (“STX”) is separated from the other two islands by 40 miles of open ocean.⁶

As a result of these distances, the time and expense entailed in shipping telecommunications facilities to, and even within, the Territory increases the difficulty of providing seamless service across Viya's operational footprint. All equipment must be transported to the USVI by boat or air and is subject to additional duties and time-consuming customs processes when delivered from the U.S. mainland, despite the fact that the USVI is part

⁴ Central Intelligence Agency, *The World Factbook: Population* (July 2017), <https://www.cia.gov/library/publications/the-world-factbook/fields/2119.html#vq>.

⁵ *Where is the U.S. Virgin Islands: Geography*, http://www.vinow.com/general_usvi/geography/ (last visited Jan. 20, 2018). The USVI is 40 miles east of Puerto Rico.

⁶ *Id.*

of the United States. Furthermore, once installed, that equipment is more expensive to repair and has a much shorter useful lifespan than is the case on the U.S. mainland due to the USVI's mountainous terrain, frequent earthquakes,⁷ the tropical climate and corrosive effects of salt air, and the rigors of even a typical hurricane season.

Moreover, the USVI economy has been on the downturn for more than a decade. USVI residents have a median household income that is nearly 35 percent lower than in the U.S.⁸ The USVI also has double the unemployment rate and three times the poverty rate of the U.S. mainland, and close to 35 percent of USVI households have an annual income below \$25,000.⁹ Further compounding the financial distress of USVI residents, the Territory has a very high cost of living relative to the rest of the United States, including exceptionally expensive and

⁷ STT and STJ are seated on the edge of one tectonic plate, and STX is on the edge of another, making earthquakes fairly common. National Park Service, *Earthquakes and Tsunamis* (Apr. 14, 2015), <https://www.nps.gov/viis/learn/nature/earthquakes-and-tsunamis.htm>. In fact, on January 9, 2018, the USVI received a tsunami alert as the result of an earthquake off the coast of Honduras. Fortunately, the event passed without incident. Everett Rosenfeld, *Magnitude 7.6 Earthquake Strikes Caribbean*, CNBC (Jan. 9, 2018), <https://www.cnbc.com/2018/01/09/magnitude-7-point-8-earthquake-strikes-caribbean-tsunami-waves-possible-usgs.html>.

⁸ The USVI median household income is approximately \$37,000, whereas the median household income in the 50 states and Washington, D.C. is over \$57,000. Kaiser Family Foundation, *U.S. Virgin Islands Fact Sheets* (Dec. 2017), <http://files.kff.org/attachment/Fact-Sheet-US-Virgin-Islands-Fast-Facts>; United States Census Bureau, *Median Household Income in the United States* (Sept. 14, 2017), <https://www.census.gov/library/visualizations/2017/comm/income-map.html>.

⁹ VI Electronic Workforce System, *Employment Situation: July 2017*, <https://www.vidolviews.org/gsipub/index.asp?docid=430> (last visited Jan. 20, 2018); Division of Medical Assistance, Department of Human Services, *The United States Virgin Islands Access Monitoring Review Plan 2016* (2016), <https://www.medicaid.gov/medicaid/access-to-care/downloads/review-plans/vi-amrp-16.pdf>; Jessica L. Semega, Kayla R. Fontenot & Melissa A. Kollar, *Income and Poverty in the United States: 2016*, United States Census Bureau (Sept. 2017), <https://www.census.gov/content/dam/Census/library/publications/2017/demo/P60-259.pdf>.

frequently unavailable public utilities.¹⁰ In addition, there is a profound shortage of skilled labor in the USVI, which increases Viya's labor costs relative to the U.S. mainland and slows the deployment of telecommunications facilities.

Similarly, the USVI government, which is the single largest employer in the Territory, also has experienced significant difficulties in recent years, even before the financial distress wrought by the 2017 hurricane season. It has the highest per capita debt and the highest debt-to-gross domestic product ("GDP") ratio of any U.S. state or territory, including Puerto Rico.¹¹ Further, the USVI government runs an annual deficit of approximately \$100 million and only has minimal cash on hand.¹² The USVI's GDP, currently approximately \$3.9 billion, has fallen by nearly 20 percent since 2007,¹³ and this reduction in economic activity is certain to accelerate in

¹⁰ See Teo Spengler, *How to Move to St. Thomas, Virgin Islands*, USA Today, <http://traveltips.usatoday.com/move-st-thomas-virgin-islands-61954.html> (last visited Jan. 20, 2018); see also Ashley Bouzianis, *Cisterns 101: Residential Water Supply in the USVI*, <http://www.chrishanley.com/news-info/cisterns-101-residential-water-supply-usvi/> (last visited Jan. 20, 2018).

¹¹ Robin Respaut, *Shunned from bond market, U.S. Virgin Islands face cash crisis*, Reuters (Aug. 2, 2017), <https://www.reuters.com/article/us-usa-virginislands-crisis/shunned-from-bond-market-u-s-virgin-islands-faces-cash-crisis-idUSKBN1AI0D2>. The USVI's current debt load is approximately \$2 billion, excluding the additional \$6.5 billion owed to creditors and pensioners. Bill Kossler, *Analysis: Mapp Accentuates the Positive in SOTA Address*, St. Croix Source (Feb. 3, 2017), <https://stcroixsource.com/2017/02/03/analysis-mapp-accentuates-the-positive-in-sota-address/>; Mary Williams Walsh, *After Puerto Rico's Debt Crisis, Worries Shift to Virgin Islands*, NYT (June 25, 2017), https://www.nytimes.com/2017/06/25/business/dealbook/virgin-islands-debt-payment-pensions.html?_r=0.

¹² The Virgin Islands Consortium, *USVI Budget Deficit Could Widen To \$325 Million Post-Hurricanes Irma and Maria; Hospitals In Urgent Need Of Funds For Operations* (Oct. 16, 2017), <http://viconsortium.com/featured/usvi-budget-deficit-could-widen-to-325-million-post-hurricanes-irma-and-maria-hospitals-in-urgent-need-of-funds-for-operations/>.

¹³ Bureau of Economic Analysis, *Gross Domestic Product for the U.S. Virgin Islands Increases in 2016* (Dec. 1, 2017), https://www.bea.gov/newsreleases/general/terr/2017/vigdp_120117.pdf.

the short term due to the heavy reliance of the Territory's economy on tourism.¹⁴ It is likely to be years before the USVI's tourism industry is restored to pre-storm levels.

For all of these reasons, telecommunications carriers, such as Viya, that provide services in the USVI face unique operational challenges and substantially higher costs to serve their customers than carriers serving the U.S. mainland. This is true even under the best of circumstances. Of course, Viya's local team is accustomed to meeting these challenges and devotes considerable effort to ensuring that USVI residents and businesses have access to high-quality communications services, consistent with its mission and regulatory obligations. But it simply was not operationally or commercially feasible for Viya or any other USVI business to adequately prepare for the catastrophic damage and resulting financial burdens that were caused by the historic storms Irma and Maria.

B. Hurricanes Irma and Maria Devastated USVI Infrastructure.

The 2017 hurricane season, one of the top-ten most active Atlantic hurricane seasons on record,¹⁵ made the already difficult situation in the USVI nearly impossible. The American

¹⁴ The tourism industry directly or indirectly employs approximately half of the USVI workforce. Tom Bolt, *Tourism Industry Contributes to Drive USVI Economy*, Virgin Islands Law Blog (Jan. 6, 2015), <https://lawblog.vilaw.com/2015/01/articles/community-affairs/tourism-industry-continues-to-drive-usvi-economy/>. Prior to the storms, the total contribution of the tourism, trade, and service industries to GDP was around 60 percent and the direct travel and tourism contribution to GDP was around 30 percent. See Rochelle Turner and Evelyne Freiermuth, *Economic Impact 2017, US Virgin Islands*, World Travel & Tourism Council (2017), <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2017/usvirginislands2017.pdf>. Although cruise ship activity is resuming, flights to the USVI remain limited and several major hotels have announced that they do not expect to resume operations until 2019 or later.

¹⁵ Jonathan Belles, *2017 Atlantic Hurricane Season Recap*, The Weather Channel (Nov. 28, 2017), <https://weather.com/storms/hurricane/news/2017-11-11-moments-hurricane-season-atlantic-irma-maria-harvey>. A typical hurricane season has approximately 12 tropical storms and 6 hurricanes. By contrast, the 2017 hurricane season brought 17 tropical storms and 10 hurricanes, 6 of which were major hurricanes. Suzanne Rowan Kelleher, *Hurricane Season*

public is generally aware of the widespread damage caused by the four Category 4 or greater storms that struck the United States over a two-month period in the fall of 2017—Harvey, Irma, Maria, and Nate—and particular attention has been focused on Hurricane Maria’s impact on Puerto Rico. But there is much less understanding of the complete devastation inflicted on the USVI by the one-two punch of Hurricanes Irma and Maria, each of which hit the USVI as Category 5 storms, separated in time by only two weeks.

On September 6, 2017, Hurricane Irma struck the USVI. It was the strongest Atlantic basin hurricane ever recorded, with a maximum wind strength of 185 miles per hour,¹⁶ and it was the first Category 5 hurricane in the Atlantic basin since 1989.¹⁷ Overall, the storm caused upwards of \$65 billion in damages. As a result, the USVI was declared a major disaster area on September 7, 2017.¹⁸ Hurricane Irma destroyed most of Viya’s wireline and wireless communications infrastructure on STJ and STT, as well as the commercial power network serving the islands. Using STX (which was relatively lightly affected) as its base of operations, Viya immediately set to work restoring its wireless infrastructure to provide at least a minimal level of connectivity to USVI residents, the USVI government, and first responders.

2017 Expected to Bring Average Number of Storms, TripSavvy (Oct. 24, 2017), <https://www.tripsavvy.com/hurricane-season-planning-and-predictions-3266728>.

¹⁶ Jennifer Fabiano, *Timeline recounts the devastating 2017 Atlantic hurricane season and storms that made it memorable*, AccuWeather (Nov. 15, 2017), <https://www.accuweather.com/en/weather-news/timeline-recounts-the-devastating-2017-atlantic-hurricane-season-and-storms-that-made-it-memorable/70003283>.

¹⁷ *Id.*

¹⁸ Press Release, White House Press Office, President Donald J. Trump Approves U.S. Virgin Islands Disaster Declaration (Sept. 7, 2017), <https://www.whitehouse.gov/the-pressoffice/2017/09/07/president-donald-j-trump-approves-us-virgin-islands-disaster-declaration>.

Less than two weeks later, on September 20, 2017, Hurricane Maria hammered the USVI with winds reaching 155 miles per hour.¹⁹ It is estimated that this second storm caused more than \$100 billion in aggregate damages.²⁰ STX was in the powerful eyewall of the storm and therefore received the brunt of its wrath. Many structures on STX, as well as its electrical grid and almost all communications infrastructure, were destroyed. Further, substantially all of the restoration work that had been completed in STT and STJ was undone. In addition, Viya lost STX and Puerto Rico as staging areas for further recovery efforts, and had to instead rely on resources shipped in from Miami (which was subsequently impacted by Hurricane Maria when it made landfall in Florida), Guyana (where ATNI has a separate subsidiary), and the Dominican Republic.

USVI Governor Mapp has estimated that the cost to rebuild the USVI's infrastructure will be over \$7.5 billion.²¹ Four months later, this process has begun, but there is still much to do. Many residents and businesses remain without power or only recently have had it restored.²² The storms toppled or broke most utility poles, pulled down aerial cables, ripped out customer

¹⁹ See Travis Fedschun & Nicole Darrah, *Hurricane Maria Surges Toward Puerto Rico, US Virgin Islands*, Fox News (Sept. 20, 2017), <http://www.foxnews.com/world/2017/09/20/hurricane-maria-takes-aim-at-puerto-rico-us-virgin-islands-as-category-5-storm-strengthens.html>; Jeremy Hobson, *U.S. Virgin Islands Governor On Devastation After Maria And Irma*, WBUR (Sept. 21, 2017), <http://www.wbur.org/hereandnow/2017/09/21/us-virgin-islands-kenneth-mapp-maria>.

²⁰ Jeff Masters, *Hurricane Maria Damage Estimate of \$102 Billion Surpassed Only by Katrina*, Weather Underground (Nov. 22, 2017), <https://www.wunderground.com/cat6/hurricane-maria-damages-102-billion-surpassed-only-katrina>.

²¹ Ernice Gilbert, *Week of Lobbying: Delegation of VI Government Officials Descend on Washington with \$7.5 Billion Request*, The Virgin Islands Consortium (Nov. 12, 2017), <http://viconsortium.com/virgin-islands-2/usvi-lobbys-in-washington-for-federal-aid-following-2017-hurricanes/>.

²² David Dayen, *Trump Administration Tells Puerto Rico It's Too Rich for Aid Money*, The Intercept (Jan. 18, 2018), <https://theintercept.com/2018/01/18/puerto-rico-trump-administration-tells-its-too-rich-for-aid-money/>.

drops, and tore apart residents' homes, causing even Viya's customer premises equipment to be subjected to extreme weather damage. As a result of these effects, as well as supply chain challenges hampering Viya's recovery efforts, only a small percentage of Viya's wireline customers have had their voice, broadband, and cable service restored, and there are still significant gaps in Viya's USVI wireless coverage.²³

III. VIYA IS COMMITTED TO WORKING WITH THE COMMISSION TO REBUILD COMMUNICATIONS INFRASTRUCTURE IN THE USVI

Viya is committed to rebuilding its networks in the Territory and assisting the USVI to reclaim its way of life. Its employees and managers have worked tirelessly since the storms to restore communications services to the residents, businesses, and government of the USVI, setting the standard for rapid restoration and coordination among all carriers and local agencies in the immediate aftermath of the hurricanes. Viya and its parent company ATNI have invested substantial financial resources in this undertaking. The Commission has been an exemplary partner in these efforts.

A. Viya Has Expended Substantial Resources to Rapidly Restore Communications in the USVI.

Relying on the dedication of its extensive local staff and management,²⁴ as well as outside resources contributed by ATNI,²⁵ Viya prioritized the restoration of wireless

²³ Press Release, Viya, *Viya Announces 4G LTE Wireless Coverage Throughout St. John and the Customer Experience Center Re-Opens on Thursday* (Jan. 16, 2018), <https://viyavi.com/viya-announces-4g-lte-wireless-coverage-throughout-st-john-and-the-customer-experience-center-re-opens-on-thursday/>.

²⁴ Due to the lack of electricity in the Territory immediately after the storms and the level of damage to most structures, many of Viya's employees were themselves victims of the hurricanes, and took up residence in Viya's central offices on STT and STX to facilitate their participation in Viya's restoration efforts.

communications for first responders and the USVI government. In coordination with other wireless carriers serving the USVI, Viya promptly began evaluating and rebuilding mobile sites. As rapidly as possible taking into account the scarcity of transportation options and unfortunate bureaucratic challenges, Viya moved resources, including splicing and tower crews, trucks, and equipment, from other ATNI affiliates and from other states and territories to the USVI to assist in recovery efforts. In addition, Viya immediately brought online a new 4G LTE network that Viya had been constructing prior to the storms.

Further, Viya provided functional mobile phones that use its new network to the USVI Water and Power Authority (“WAPA”), the USVI police, the Virgin Islands Territorial Emergency Management Agency, the USVI Governor’s office, the Federal Emergency Management Agency, and the Department of Homeland Security, as well as other first responders and government agencies. Without Viya, many government agencies would not have had even basic communications capabilities during the initial stages of the recovery effort. Viya also began constructing emergency wireline facilities to key government buildings, the airport, radio stations, banks, and first responder headquarters and accommodations, including a docked ship used by first responders. In addition, although Viya is not the primary data service provider for the USVI’s public safety answering points (“PSAPs”), it immediately commenced repairs to the facilities serving the PSAPs.

To restore mobile connectivity, Viya deployed more than 30 hot spots across urban areas on all three islands and is still providing free WiFi at these locations to USVI residents. It also distributed thousands of MiFi devices to residents to enable broadband access on Viya’s new

²⁵ Even though Viya’s management, employees, and operations are all local, Viya was able to rely on ATNI to provide substantial communications-related resources while local teams focused on the initial stages of Viya’s restoration efforts.

LTE network. Viya is continuing in its efforts to restore full mobile functionality to the islands as rapidly as possible, although it has been hampered by unavailable or unreliable electric power, impassable roads, the logistical challenges of keeping generators operating and fueled (electrical restoration to cell sites by WAPA has not been a top priority), and significant security concerns. Apart from restoring its own mobile network, Viya also is assisting other carriers. For several months, Viya carried, on a roaming basis, virtually all of one large wireless carrier's mobile traffic. Viya continues to coordinate and cooperate regarding restoration efforts with WAPA and other wireless carriers.

Restoration of Viya's wireline network will take longer, but it is well underway. Viya has completed its evaluation of the wireline network and is rapidly rebuilding. However, as discussed below, difficulties in getting the needed crews, trucks, and equipment to the USVI and through customs, as well as transporting these resources between islands, have significantly slowed this effort. In addition, the wireline network cannot be supported exclusively by generators, which already have been running for months on end, and the USVI electric grid remains down in some places and unreliable in others. Despite these significant challenges, Viya expects to reconnect most of the Territory's residents and businesses to its wireline network by mid-2018, if sufficient resources are available and unforeseen obstacles do not arise.²⁶

²⁶ See Emergency Petition of Viya, WC Docket No. 10-90 (filed Dec. 6, 2017) ("Emergency Petition"). Since Viya's Emergency Petition was filed in December, Viya has accelerated its restoration schedule by expending significant additional resources and resolving some of its initial logistics challenges, although many remain. Prompt action by the Commission on Viya's Emergency Petition nevertheless remains essential to Viya's ability to complete and fund its restoration efforts.

B. The Commission Has Been an Excellent Partner in Viya’s Restoration Efforts.

Fortunately, the Commission has been an exceptionally efficient, practical, and flexible regulator in the aftermath of Hurricanes Irma and Maria. Certain federal and Territorial governmental agencies were not consistently willing to waive or circumvent their bureaucratic processes to facilitate Viya’s recovery efforts, which slowed the speed at which Viya was able to restore connectivity in the USVI. By contrast, the Commission was incredibly responsive to Viya’s needs and proactive in its efforts to make telecommunications restoration a priority in the USVI, as well as in other regions affected by the storms. The Commission recognized early on that the devastation wrought in the USVI by the hurricanes was of a unique level seen only once every several generations. In Viya’s view, the Commission reacted in a manner commensurate with the severity of the catastrophe. For this, Viya extends its gratitude.²⁷

Leveraging its experience with prior hurricanes, the Commission issued emergency contact information and instructions for securing expedited special temporary authorizations (“STAs”) even before Hurricane Irma struck the Territories.²⁸ Viya availed itself of these resources. It found Commission staff easily reachable around the clock and highly practical, flexible, and constructive. In addition to crafting emergency regulatory relief that was both substantive and process-oriented, Commission staff also played an instrumental role with respect

²⁷ Similarly, the USVI Public Services Commission, granted Viya’s petition for temporary relief of certain Territorial telecommunications regulatory obligations during the initial aftermath of the storms and has filed in support of Viya’s FCC petitions for relief, despite its own post-hurricane challenges.

²⁸ *Federal Communications Commission Provides 24/7 Emergency Contact Information for Hurricane Irma*, Public Notice, 32 FCC Rcd 6817 (2017); *The Public Safety and Homeland Security Bureau, in Coordination with Multiple Other Bureaus, Issues Procedures to Provide Emergency Communications in Areas Affected by Hurricane Irma*, Public Notice, 32 FCC Rcd 6818 (PSHSB 2017).

to the overall coordination of the recovery process. The staff actively worked with Viya to understand Viya's needs and to prevent Commission regulations adopted for normal-course operations from slowing down Viya's emergency recovery efforts. Needed STAs were granted in a matter of hours.²⁹

Further, the Commission promptly issued a series of blanket temporary waivers of filing deadlines and certain regulatory requirements,³⁰ as well as activating DIRS (and keeping it active to date) and suspending network outage reporting requirements.³¹ In many instances, the Viya on-island staff who normally would have been largely responsible for compliance with Commission requirements and for efforts to secure Commission waivers of these requirements were among those most affected by the storms. But following the storms, Viya's on-island staff had inadequate communications capabilities and were already overburdened with efforts to restore and stabilize Viya's operations. By unilaterally granting needed federal regulatory relief, the Commission enabled Viya to devote its professional resources to where they were most needed—its operations in the Territory.

²⁹ *The Public Safety and Homeland Security Bureau, in Coordination with Multiple Other Bureaus, Issues Updated Procedures and Contacts to Provide Emergency Communications in Areas Affected by Hurricane Irma*, Public Notice, 32 FCC Rcd 6849 (PSHSB 2017).

³⁰ *See Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Extend Filing and Regulatory Deadlines and Streamline Environmental Notification Process for Areas Affected by Hurricane Maria*, Public Notice, 32 FCC Rcd 7453 (WTB and PSHSB 2017); *WCB Waives USF Rules and Deadlines to Aid in Hurricane Recovery*, Order, 32 FCC Rcd 7456 (WCB 2017); *Waiver Expanding Public Safety Communications in Puerto Rico & USVI*, Order, 32 FCC Rcd 7327 (PSHSB 2017); *Temporary Waiver of Certain 911 Regulations Due to Hurricane Maria*, Public Notice, 32 FCC Rcd 7493 (PSHSB 2017); *WCB Waives Numbering Rules for Providers Affected by Maria & Jose*, Order, 32 FCC Rcd 7005 (PSHSB 2017); *Extension of Filing Window for Harvey & Irma Hurricane Regulatees*, Public Notice, 32 FCC Rcd 6968 (OMD 2017); *Public File Deadline Extended for Broadcasters in Puerto Rico & USVI*, Public Notice, 32 FCC Rcd 9400 (MB 2018).

³¹ *FCC Activates Disaster Information Reporting for Hurricane Maria*, Public Notice, 32 FCC Rcd 6992 (PSHSB 2017).

Moreover, correctly recognizing that affected communications companies would need an immediate cash infusion to fund their recovery efforts, the Commission also unilaterally and immediately made available up to seven months of front-loaded Connect America Fund (“CAF”) support.³² These proactive steps by the Commission helped ease the immediate financial impact of the storms and prevented Viya and other carriers from being required to divert scarce resources to regulatory matters.

Viya strongly believes that the best means available to the Commission to promote the safety and welfare of citizens suffering from the after-effects of a disaster is to avoid needlessly taxing the resources of communications companies best situated to effectively manage recovery efforts. Mandating strict compliance with communications regulatory frameworks intended to apply in normal circumstances slows the recovery process without providing any material concomitant benefits. The need to rapidly restore communications capabilities after a disaster is paramount. Adequate communications are a key lynch pin on which other recovery efforts rely. The Commission’s approach to Hurricanes Irma and Maria made clear that it understands this. The Commission’s efficiency and flexibility in connection with the hurricanes enabled Viya to rapidly restore at least basic wireless connectivity in the Territory, which, in turn, facilitated efforts by first responders to save lives and reduce the suffering of USVI residents.

IV. THE COMMISSION SHOULD CONSIDER CERTAIN STEPS TO IMPROVE FUTURE DISASTER MITIGATION AND RECOVERY EFFORTS

While the Commission’s response to the hurricanes was commendable, Viya’s experience revealed some possible areas for further improvement that could enhance efforts

³² *Connect America Fund*, Order, 32 FCC Rcd 7981 (2017) (making \$76.9 million immediately available for the restoration of communications networks in the USVI and Puerto Rico).

going forward. Below, Viya highlights several key actions and considerations that may warrant further examination by the Commission, whether in workshops or other pertinent proceedings.³³

A. Additional Funding is Needed to Enable Carriers Serving Island Markets to Sufficiently Harden Their Facilities Against Category 5 Storms Such as Hurricanes Irma and Maria.

As explained above, the USVI both is a very high-cost market due to its geography, topography, and weather, as well as an economically depressed market, which limits the rates for communications services that USVI residents and businesses can afford. In addition, with only approximately 107,000 residents—a figure that is estimated to have declined by 10 to 15 percent after the hurricanes, it is a small market with a relatively low population density. This further limits Viya’s ability to recover its network infrastructure costs relative to other island markets.³⁴ As a result, it is not commercially feasible for USVI carriers such as Viya to independently significantly harden their facilities against catastrophic storms such as Hurricanes Irma and Maria. The market simply cannot bear the substantial cost of such efforts.

Consequently, Viya believes that the Commission should evaluate whether it is appropriate to direct additional funding to the USVI to enable Viya to harden essential network infrastructure against future catastrophic storms without placing excessive burdens on

³³ Public Notice at 3. Viya encourages the Commission to consider hosting one or more of its post-hurricane workshops in the USVI.

³⁴ Although both the USVI and Puerto Rico suffered extensive damaged from the hurricanes, Puerto Rico has a much larger population and more diverse economy, which provides Puerto Rico a meaningful advantage in its recovery efforts relative to the USVI. With over 3.4 million residents, Puerto Rico’s population is more than thirty times the USVI’s population. Central Intelligence Agency, *The World Factbook, Population* (July 2017), <https://www.cia.gov/library/publications/the-world-factbook/fields/2119.html#vq>. Further, the USVI’s population density is significantly lower than the population density of Puerto Rico. See United States Census Bureau, *Quick Facts, Puerto Rico*, <https://www.census.gov/quickfacts/PR> (last visited Jan. 20, 2018); see also United States Census Bureau, *United States Virgin Islands, Population Map*, https://www.census.gov/schools/pdf/materials/cis_map_58VI.pdf (last visited Jan. 20, 2018).

ratepayers.³⁵ Viya also requests for the Commission to more generally evaluate how and whether its rules and policies of general applicability should apply to smaller island territories in light of their unique attributes. Viya believes that doing so would be consistent with the Commission’s mandate to “ensure the availability of a ‘Nation-wide, and world-wide wire and radio communication service with adequate facilities ... for the purpose of the national defense ... [and] *for the purpose of promoting safety of life and property.*’”³⁶

The Commission recognized the unusually high cost of providing wireline services in non-contiguous areas such as the USVI when it permitted carriers serving these markets to elect to maintain frozen CAF Phase II funding, rather than requiring these carriers to switch to the model-based funding currently received by incumbent local exchange carriers serving the U.S. mainland.³⁷ Due to the particular attributes of the USVI market, prior to the hurricanes Viya relied on CAF frozen support to maintain its commercial viability while providing communications services that are affordable to USVI residents. However, the CAF frozen support will be challenged to do even that in the aftermath of the hurricanes given the population decline and the degradation of the economic situation in the Territory. That support is not

³⁵ Experts have asserted that the strength of storms in the Atlantic will continue to increase as the temperature of the ocean continues to rise. Annie Sneed, *Was the Extreme 2017 Hurricane Season Driven by Climate Change?*, Scientific American (Oct. 26, 2017), <https://www.scientificamerican.com/article/was-the-extreme-2017-hurricane-season-driven-by-climate-change/>. At least one early prediction indicates equivalent or greater activity for the 2018 hurricane season, which begins in June. See Brett Clarkson, *2018 will be another busy hurricane season, UK-based experts predict*, SunSentinel (Dec. 7, 2017), <http://www.sun-sentinel.com/news/weather/hurricane/fl-reg-tropical-storm-risk-hurricane-season-20171207-story.html>.

³⁶ Public Notice at 1-2 (citing 47 U.S.C. § 151) (emphasis added).

³⁷ *Connect America Fund; High-Cost Universal Service Support*, Report and Order, 29 FCC Rcd 3964, 4028-29 ¶¶ 150-54 (2014) (acknowledging that non-contiguous carriers face “unique costs and circumstances” and therefore permitting them “to maintain existing support levels” if the Commission’s cost-based “model did not provide sufficient support”).

sufficient to enable Viya also to significantly harden its wireline network in light of the financial challenges Viya already is encountering. As a result of the topography of the USVI, undergrounding cables requires either trenching through granite in mountainous regions (most of the USVI) or using marine-grade conduit elsewhere because of the shallow depth and salt content of the water table. Both approaches are extremely cost intensive.

Similarly, sufficiently hardening wireless facilities to better survive the most intense hurricanes is cost prohibitive. For example, if cost were not a consideration, Viya could use bolstered towers, undergrounded wireline local backhaul (rather than the microwave links that are prevalent in much of the USVI), high-capacity generators buried in underground concrete bunkers with long-term fuel supplies, and redundant off-island wireless and wireline backhaul connectivity. But the extreme expense of these steps cannot be supported by the USVI's small and relatively less affluent consumer base.

In light of the foregoing, it seems appropriate for the Commission to further evaluate whether additional funding is warranted to further harden wireless and wireline network infrastructure on smaller, less populated island territories such as the USVI. Although it may not be possible to harden USVI networks against all storms, with additional resources USVI carriers can increase the survivability of network infrastructure against typical storms and reduce the level of damage caused by even the worst hurricanes. Consistent with this approach, Viya has submitted emergency petitions to the Commission seeking additional one-time funding for rebuilding and hardening USVI infrastructure in the wake of the hurricanes.³⁸

³⁸ Emergency Petition; Emergency Petition of Viya, WC Docket Nos. 11-42, 10-90, 02-60, 06-122, 14-58, WT Docket No. 10-208 (filed Oct. 5, 2017).

More broadly, Viya requests the Commission to remain cognizant of the unique attributes of the United States' smaller island territories generally when determining how the Commission should apply rules and policies of general applicability to these territories. It often may be the case that regulatory relief is appropriate in light of the insular and high-cost nature of these markets.

B. The Commission Should Maintain Flexibility With Respect to the Frequency and Substance of DIRS Reporting by Carriers.

The Commission's activation of DIRS on September 6 and extension of it to the USVI just one day later are emblematic of the agency's prompt, proactive, and constructive response to the hurricanes.³⁹ By design, DIRS provides a streamlined process to submit and update data, facilitating quick and efficient information sharing. This, in turn, permits real-time assessments of trends regarding the extent of infrastructure damage and the pace of restoration progress. DIRS accomplishes these objectives without overburdening the carriers responsible for communications restoration.⁴⁰

Rather than requiring communications service providers to expend their scarce resources collecting a detailed set of site-by-site data and formatting it to specific technical standards, the Commission initially provided carriers with significant flexibility regarding the type of data that

³⁹ *Public Safety & Homeland Security Bureau Announces the Activation of the Disaster Information Reporting System In Response to Hurricane Irma*, Public Notice, 32 FCC Rcd 6828 (PSHSB 2017); *Public Safety & Homeland Security Bureau Announces the Extension of the Disaster Information Reporting System to All of Puerto Rico and the U.S. Virgin Islands*, Public Notice, 32 FCC Rcd 6854 (PSHSB 2017) ("DIRS Extension Public Notice").

⁴⁰ By contrast, the network outage reporting system ("NORS") that the Commission suspends when it activates DIRS would require carriers to devote significantly more resources in a disaster scenario. See *New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830 (2004). Consequently, it is not only appropriate, but crucial, that the Commission promptly suspends NORS during the recovery period after a widespread disaster.

they could submit to DIRS and the manner in which they did so. This flexibility was particularly important during the critical days and weeks immediately after the storms, when carriers' resources were the most strained. Compliance even with existing requirements and expectations demanded a diversion of resources from the critical mission of service restoration. Those burdens are greater for smaller providers like Viya, whose resources and workforce are already constrained. The Commission's practical approach allowed Viya to focus on the immediate priority of rebuilding its network and restoring service while also affording it sufficient time to hone its techniques for collecting and reporting information, which resulted in better data and more efficiency than otherwise might have been possible.

The situation following the hurricanes was very fluid, and obtaining real-time data about the status of network facilities was challenging due to widespread travel impediments caused by obstructions in the USVI's roadways as well as the lack of reliable, and in many places any, electricity to power nodes, network operating centers, and tower sites. Consequently, DIRS should not be expected to be, or relied upon as, an accurate snapshot at any given moment of where wireless and/or wireline service is available or unavailable.⁴¹ Instead, DIRS is best utilized to identify general operational trends over time. For example, a cell site or wireline node that is restored one morning could be offline the next day, or even later in the same day, as a result of failing or stolen generators, an inability to refuel generators, failing wireline electric power, frequent and inadvertent line cuts that occur during the restoration and recovery process,

⁴¹ Viya found DIRS useful to better understand trends in USVI network restoration among its carrier peers, but Viya did not significantly use DIRS for network restoration planning because of the fluidity of the situation on the ground. In an environment like the aftermath of the storms, it simply is not realistic to expect *any* reporting system to remain sufficiently timely and accurate to be relied upon for resource deployment purposes on an hour-by-hour basis, which is the timeframe in which resource-deployment decisions need to be made.

or failure of a downstream wireless or wireline backhaul facility, among many other reasons.⁴²

The resources that would be required to maintain the real-time accuracy of the status of communications infrastructure would be enormous, and these resources would be unavailable to carriers for restoration purposes. Further, by the time that DIRS data is aggregated by the Commission and published, it is likely, at least during the initial stages of recovery, that the underlying situation will have changed, perhaps substantially.

For the foregoing reasons, as part of its evaluation of its response to the hurricanes, the Commission should examine the utility and reliability of different DIRS reporting intervals, seeking a balance between obtaining updates that are regular and predictable yet not overly granular. In this regard, the Commission deserves credit for amending the DIRS schedule to require reports three days a week rather than seven.⁴³ Further, that change appears to have been motivated primarily by a desire to “harmonize [its] reporting schedule ... with those of other agencies,”⁴⁴ which illustrates the Commission’s commendable interest in improving inter-agency coordination—an issue discussed further below.⁴⁵ In addition, in future instances in which the Commission triggers DIRS, it should maintain flexibility regarding the type of data that may be submitted and the procedures for submitting it—just as the Commission provided to carriers after

⁴² Indeed, the Commission’s data shows that the percentage of cell sites out on STX and STT fluctuated significantly several times in the initial 10-day span following Hurricane Irma. *See* FCC Hurricane Response Efforts, Sept. 26, 2017, at 10 (data between September 9 and 19, 2017), https://apps.fcc.gov/edocs_public/attachmatch/DOC-346920A1.pdf.

⁴³ *The FCC’s Public Safety & Homeland Security Bureau Announces Amended Schedule for Filing Hurricane Maria Reports in the Disaster Information Reporting System*, Public Notice, 32 FCC Rcd 9456 (PSHSB 2017).

⁴⁴ *Id.*

⁴⁵ *See infra* Section IV.D.

the hurricanes, especially in their immediate aftermath.⁴⁶ For example, the Commission was willing to receive information by phone in the immediate aftermath of the storms and generally accepted whatever status information was then available to carriers based on their operational evaluations at that stage. This approach minimized the reporting burdens on Viya and other carriers and thereby increased meaningful participation in the voluntary DIRS program.⁴⁷

C. Restoring Communications Capabilities Should Be Given Higher Priority During Disaster Recovery Efforts.

Hurricanes Irma and Maria severely disrupted all aspects of life for residents of the USVI. The storms severely damaged transportation systems, government facilities, hospitals, housing and businesses, schools, and communications and electric distribution infrastructure, and profoundly disrupted the delivery of food, water, power, and medical care. Territory-wide disaster recovery efforts began immediately, if somewhat erratically, after the storms had passed. Viya understands that the governmental resources available for the recovery process are limited, and that their deployment requires prioritization. But in contrast to the Commission's efforts, Viya believes that communications did not receive a high enough priority among other governmental actors in this instance.

Viya understands that the Commission possesses only limited influence over other governmental stakeholders and is not the primary entity charged with determining how relief

⁴⁶ To the extent that any stakeholder proposes an expansion of what is expected of carriers in connection with DIRS, Viya urges the Commission to proceed with great caution and to consider whether the proposed change is consistent with the original purpose and voluntary nature of DIRS.

⁴⁷ See, e.g., Federal Communications Commission, *Disaster Information Reporting System*, <https://www.fcc.gov/general/disaster-information-reporting-system-dirs-0> (last visited Jan. 20, 2018) (describing DIRS as a “voluntary” system); Public Notice at 2 (stating that data is “filed voluntarily” by communications service providers). Viya believes that DIRS participation should remain voluntary.

efforts are targeted and prioritized. Viya also greatly appreciates the efforts that the Commission made and continues to make to assist Viya to secure the transportation, power, fuel, and other inputs that Viya needs to restore communications in the USVI. But Viya nevertheless believes that it is appropriate to raise this matter in the instant proceeding to ensure that the Commission is aware of it and that the issue is part of the intergovernmental discussion likely to flow from this proceeding. As the Commission already appreciates better than most, communications capability is a key lynch pin on which other recovery efforts rely and should be given that status when prioritizing the allotment of available disaster recovery resources. Indeed, none of the other services to which these resources are devoted can function properly without adequate communications capabilities. Communications is an absolute prerequisite to their success.

Despite the central importance of communications, in Viya's experience immediately following the hurricanes and still today, over four months later, communications needs are routinely and often inappropriately subordinated to those of other sectors—through no fault of the Commission. This has been a significant source of delay and frustration for Viya. Logistics related to trucks, crews, and related materials used by other USVI utilities for restoration efforts, as well as for restoration efforts in Puerto Rico, have been consistently prioritized above those of Viya. It has slowed Viya's ability to push essential telecommunications restoration efforts forward. For example, for over two months, Viya has been struggling to ship dozens of bucket trucks from Miami to the USVI. Rather than arriving in a timely manner as a unit, some trucks have shipped while the bulk of them have been consistently delayed in favor of shipments of other materials and products. Without a critical mass of these bucket trucks, Viya's restoration of the Territory's wireline network will be negatively impacted. In addition, the restoration of electric service to Viya's mobile sites was not given sufficient priority by WAPA, and Viya often

was unable to secure the fuel that it needed for the generators powering its cell sites, as well as security for the generators. Further, Viya was at times unable to requisition the use of helicopters to surveil the condition of its infrastructure to determine how to bring wireless communications back online as rapidly as possible and to deliver replacement communications equipment to mountaintop towers that were inaccessible by road.

Viya believes that the continual displacement of these communications-specific needs hampered—and still hampers—efforts to determine the status of USVI communities and prevented aid from flowing to the locations where it was most needed.⁴⁸ Moreover, the need to move restoration and replacement equipment from the U.S. mainland heightens the detrimental effects of failing to adequately prioritize communications during recovery efforts. The cumulative effect of prioritization decisions, whatever their individual merits, has been to slow the restoration of critical communications capabilities—initially for first responders and still today for USVI residents and businesses.

To prevent this situation from arising in future disaster recovery efforts in the USVI and elsewhere, however, Viya requests the Commission to address with other governmental stakeholders the development of a more systematic priority for the restoration of basic communications capabilities and critical communications infrastructure during the crucial initial stages of recovery and in an appropriately balanced manner continually thereafter. Doing so is

⁴⁸ Viya understands that the lack of adequate prioritization of resources to the recovery of communications capabilities in the USVI may have been due in part to Viya being a private company rather than a governmental entity. However, any systematic allotment of disaster recovery resources solely to governmental purposes and away from privately held, critical communications infrastructure seems to be poor public policy. It ultimately disserves everyone's shared objective of protecting the public's safety and adequately responding to their emergency needs.

especially important for emergencies that arise in remote and insulated island territories such as the USVI.

D. Increased Interagency Coordination Would Enhance Disaster Recovery Efforts.

The Public Notice observes that the Commission is working actively with government and industry partners on the continued hurricane response efforts.⁴⁹ Such interagency coordination is an indispensable component of emergency response, although it can be a complex exercise, particularly in circumstances where, as here, the functions and jurisdictions of multiple agencies at the federal and local levels are implicated. As discussed above, the subject that comprises the Commission's core expertise—communications—underlies all other disaster recovery functions. As further noted above, Viya believes that communications restoration did not in this instance always receive the priority from other government agencies that was warranted. Increased and more effective intergovernmental coordination seems likely to go far towards resolving this issue, and the Commission is ideally suited to act as both an intergovernmental convener and single governmental point of contact for carriers.

To the extent feasible, Viya urges the Commission to continue to assert an active leadership role among peer agencies at both the federal and Territorial levels in connection with disaster recovery matters that implicate the communications sector. By effectively coordinating the diverse communications-related activities of federal and Territorial governmental agencies, the Commission can help reduce the burden on communications providers of responding to redundant and sometimes inconsistent instructions and information requests from the agencies. This, in turn, will enable carriers to devote more of their resources to restoration and recovery

⁴⁹ Public Notice at 3.

efforts. In addition, by creatively exploring opportunities for the Commission to serve as a governmental champion and governmental liaison for communications companies interacting with other government agencies, the Commission can focus increased attention on the needs of carriers before and during the disaster recovery process. Viya commends the Commission's efforts to assume these roles in the aftermath of the hurricanes, and supports further institutionalization of such functions in connection with large-scale governmental disaster recovery efforts.⁵⁰

⁵⁰ For example, to enable the Commission to obtain the best possible real-time knowledge of conditions on the ground after a catastrophic disaster and to accentuate the Commission's substantial capabilities and critical role in coordinating recovery efforts, Viya recommends that the Commission seek opportunities to embed Commission representatives directly with first responder teams on an emergency basis.

VI. CONCLUSION

Viya welcomes this opportunity to participate in the Commission's evaluation of the events following the tragic impact of Hurricanes Irma and Maria on the USVI. Viya gives the Commission very high marks for its efficient, flexible, and constructive response to the storms and greatly appreciates all of the assistance that the Commission staff tirelessly provided. Viya also recommends that the Commission further consider the recommendations discussed above, and Viya looks forward to working together with the Commission to continue to improve the disaster response and recovery process for the benefit of all Americans.

Respectfully submitted,

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